

Short-Term Industry & Occupation Employment Projections

2019-2020

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Industry Projections Methodology:

Estimation Process

- Projections are estimated using historical industry employment trends and are refined by a review of current U.S. and Arizona economic developments
- Short-term projections estimate employment from 2018 Q3 to 2020 Q2
 - Historic data are used for base-year 2018 Q2 employment levels
 - Projected data are modeled for forecast-year 2020 Q2 employment levels
- The principle data source was the Quarterly Census of Employment and Wages (QCEW) data analyzed at the individual employer level
 - Near census of all employment subject to UI Tax law
- The industry classification structure differs slightly from CES industry classification
 - Notably: State and local government education employment is categorized in NAICS 611: Educational Services

Industry Projections Methodology:

Data Sources

- Industry Projections Estimates **Include:**
 - Nonfarm employment by subsector group (3-digit NAICS)
 - Self-employed workers who work for profit or fees in their own business, profession, trade, or farm
 - Private household workers employed as domestic workers
 - Railway workers
 - Religious organization employees
 - Farm workers
- Industry Projections Estimates **Exclude:**
 - Unpaid family workers
 - Active duty military service men and woman

Occupation Projections Methodology:

Data Sources

- Occupational Staffing Patterns
 - OES survey responses are summarized by industry and matched to a NAICS code
 - Statewide responses are substituted in cases where local OES responses are not available
- Industry Employment Projections
 - Primary data source used to project changes in occupational employment

Industry Projections Methodology: Economic Assumptions

- No major events will occur and government agencies will operate within their budgets
- Population distribution and the U.S. economy framework will not differ significantly
- Long-term employment patterns will continue in most industries

For a detailed list of economic assumptions and the projections methodology in its entirety can be found at <https://laborstats.az.gov/employment-forecasts>

Substate Regions

Projected employment was estimated for 12 substate regions including:

Seven Arizona Counties

- Coconino, Maricopa, Pima, Pinal, Santa Cruz, Yavapai, and Yuma Counties

Three Multi-County Areas

- Northeast Arizona: Apache, Navajo, and Gila Counties
- Southeast Arizona: Greenlee, Graham, and Cochise Counties
- Mohave and La Paz Counties

Two Sub-County Areas

- City of Phoenix and Balance of Maricopa County

Review of Previous Employment Forecasts

2016-2017 Projected Employment

Area	Projected Growth ¹	Actual Growth	Difference
Arizona	2.84%	2.67%	-0.17%
Phoenix Metro Area ³	3.15%	3.11%	-0.04%
Tucson Metro Area ⁴	1.92%	1.75%	-0.17%

2017-2018 Projected Employment

Area	Projected Growth ²	Actual Growth	Difference
Arizona	2.40%	2.59%	0.19%
Phoenix Metro Area ³	2.77%	3.11%	0.34%
Tucson Metro Area ⁴	1.31%	1.39%	0.08%

¹Calculated employment growth from 2015 Q2 - 2017 Q2

²Calculated employment growth from 2016 Q2 - 2018 Q2

³Includes Maricopa and Pinal Counties

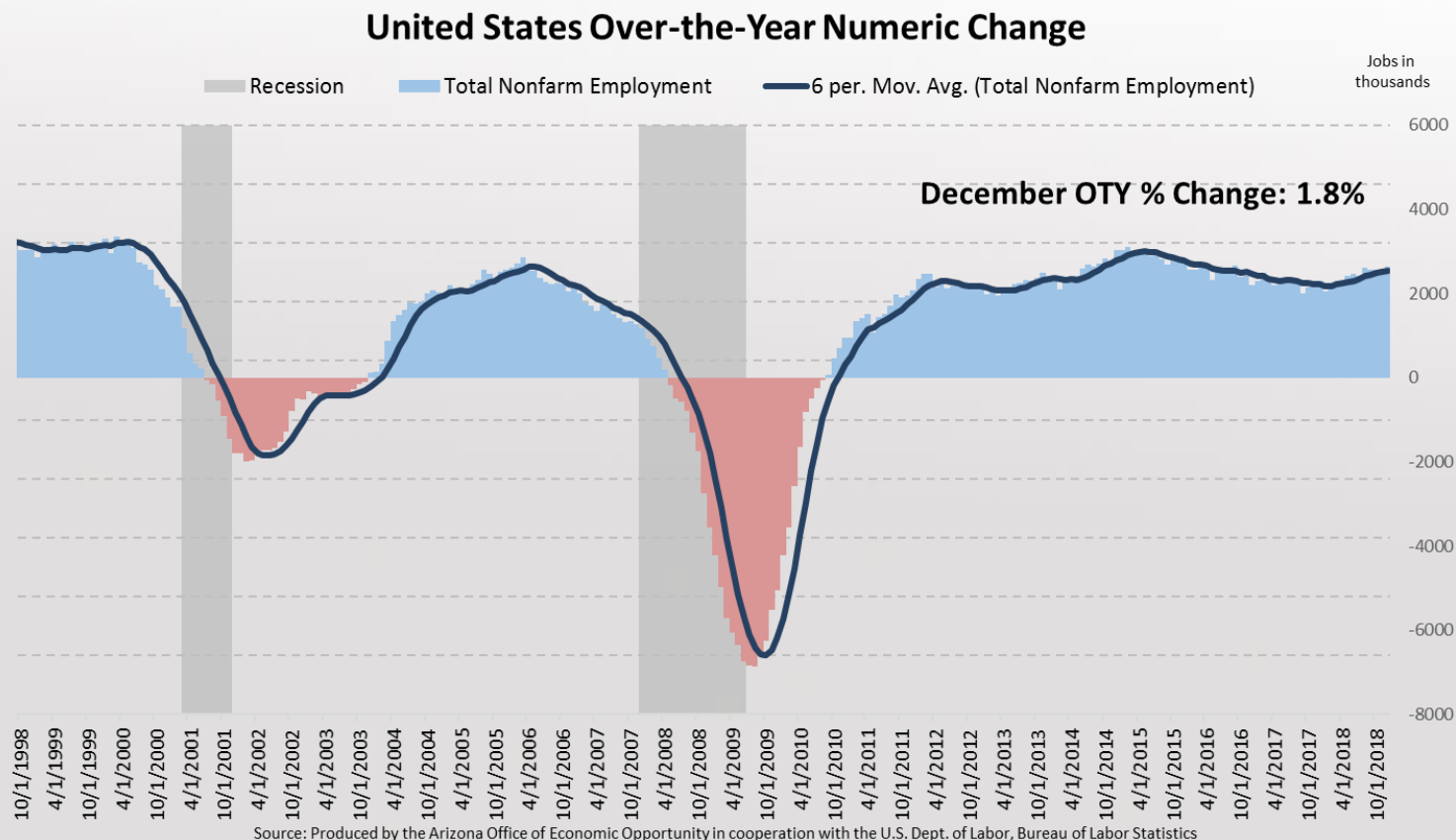
⁴Includes Pima County

Arizona Industry Highlights

- Total employment is projected to grow by 165,691 jobs over the two-year period, reaching 3,180,933 jobs in 2020 Q2
- Industry employment is projected to grow at a rate of 2.7% per year from 2018 Q2 - 2020 Q2, slightly faster than the 2.6% growth rate recorded from 2016 Q2 -2018 Q2
- All eleven industry sectors are projected to add jobs
- Educational and Health Services is projected to add the largest number of jobs (37,126 jobs or 3.0% annualized growth)
- Construction is projected to record the largest percentage gain at 5.8% annualized growth (18,888 jobs)
 - Construction is projected to be the fastest growing industry in 5 of 10 local areas

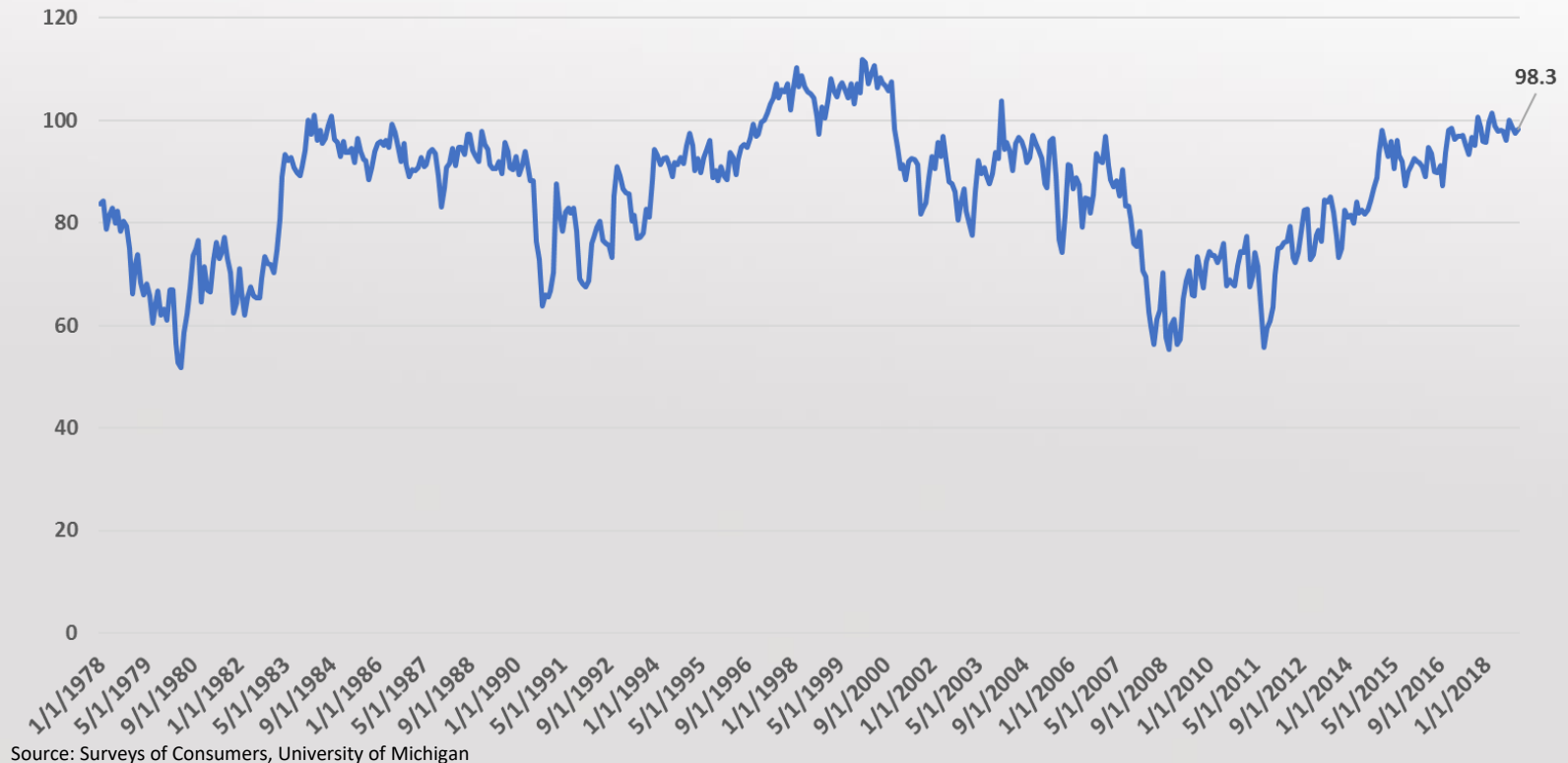
National Economic Trends

- U.S. employment continues steady and moderate employment growth
 - Nonfarm employment grew by 1.6% in 2017 and 2018
- The Consumer Sentiment Index remains at post-recession highs
- The National Quits Rate continues to increase
- Federal Reserve officials have been increasing the effective federal funds rate over the past several years
- Geographic mobility among U.S. residents remains high



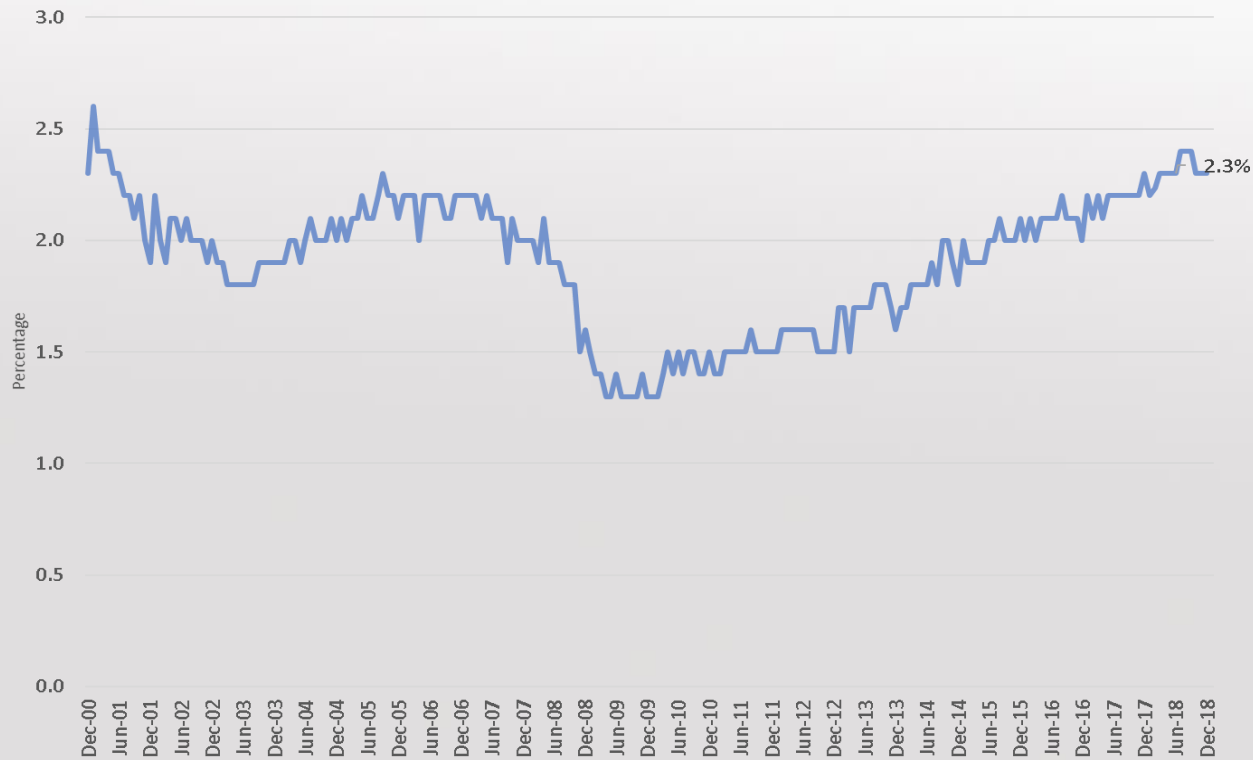
- December marked 100 consecutive months of year-over-year growth
 - '03 – '07 expansion: 53 consecutive months
 - '92 – '01 expansion: 111 consecutive months

US Consumer Sentiment Index



Consumer sentiment has increased indicating consumers' positive outlook regarding short- and long-term economic trends as well as their own financial situation

National Quits Rate



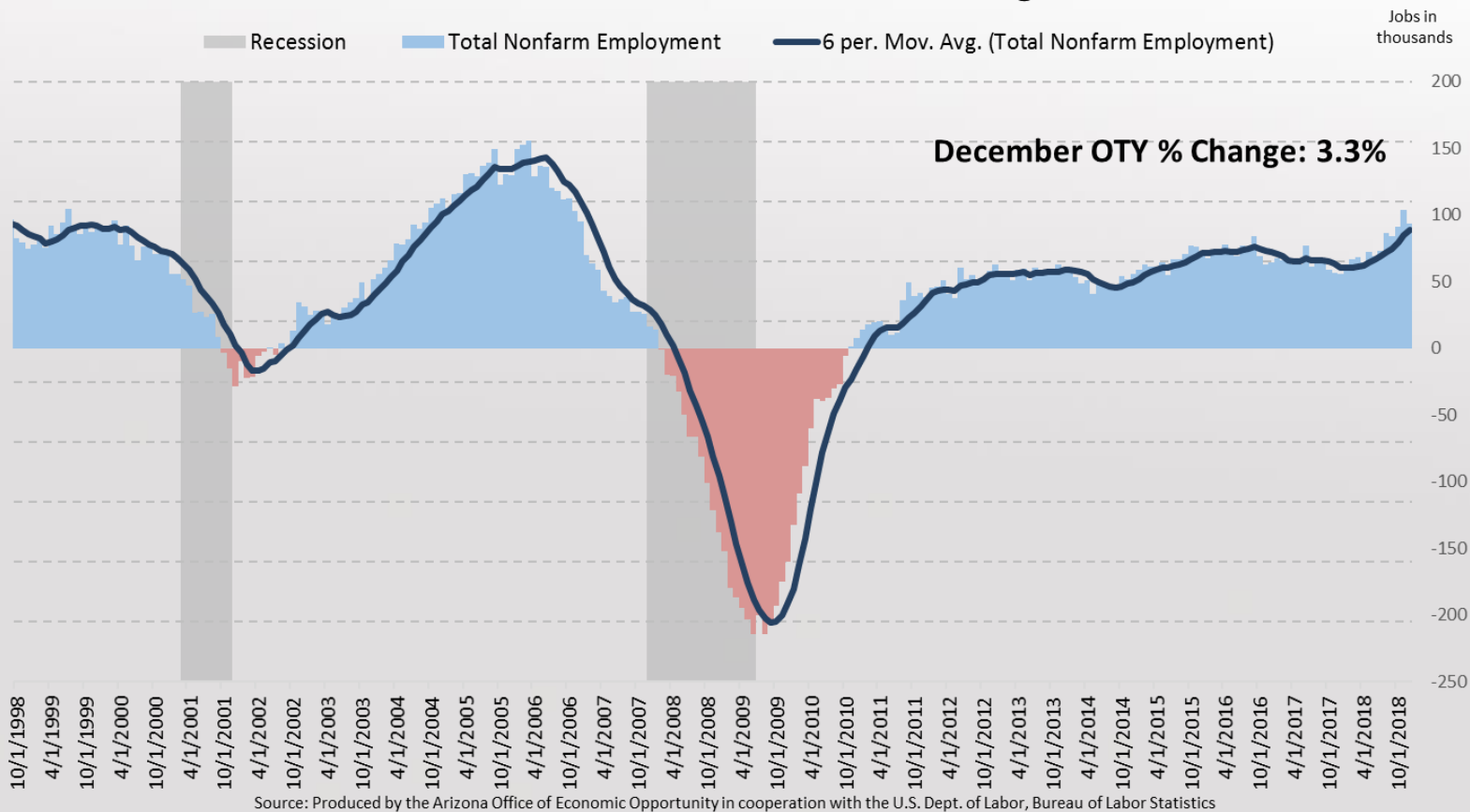
Source: U.S. Dept. of Labor, Bureau of Labor Statistics

An increase in the quits rate is an indication of job seekers' confidence in their ability to find another job

Arizona Economic Trends

- Arizona is currently experiencing one of the longest periods of employment expansion in recent history
- Arizona's population growth has been among the fastest of all 50 states
- Tens of thousands of individuals are entering into the labor force bolstering Arizona's workforce capacity

Arizona Over-the-Year Numeric Change

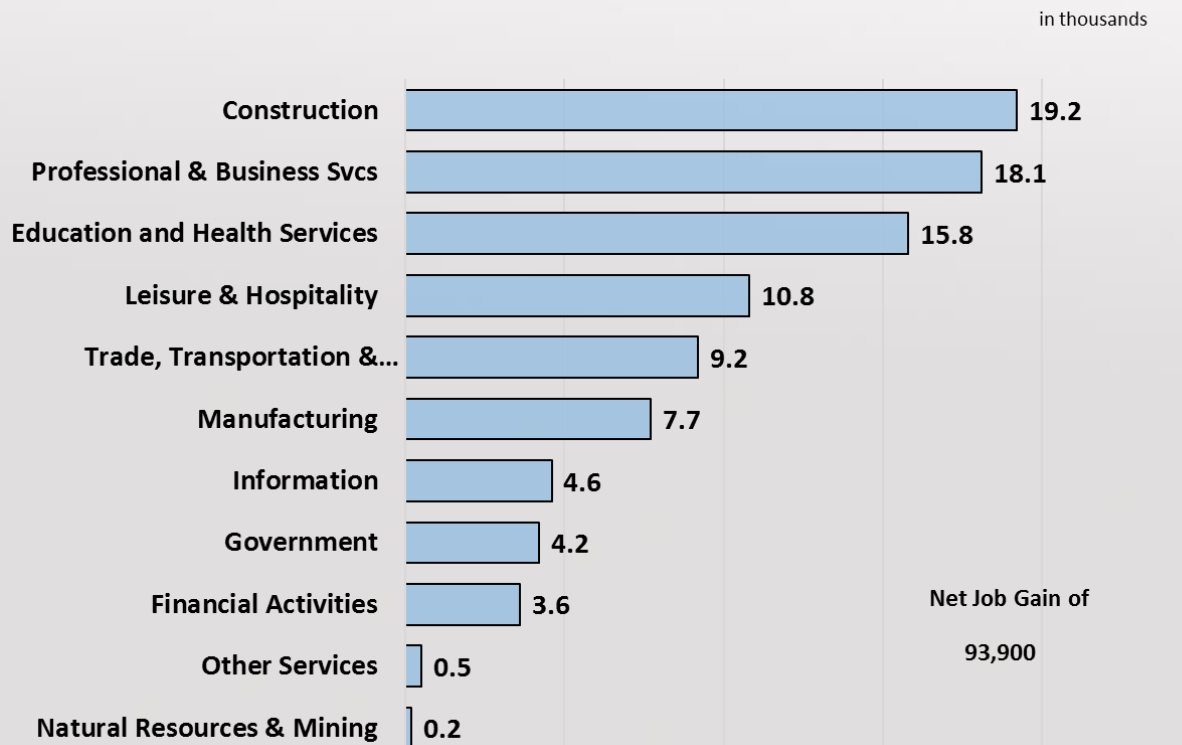


- December marked 98 consecutive months of year-over-year growth
 - '02 – '07 expansion: 66 consecutive months
 - '90 – '01 expansion: 124 consecutive months

Monthly Nonfarm Employment Series

December 2018

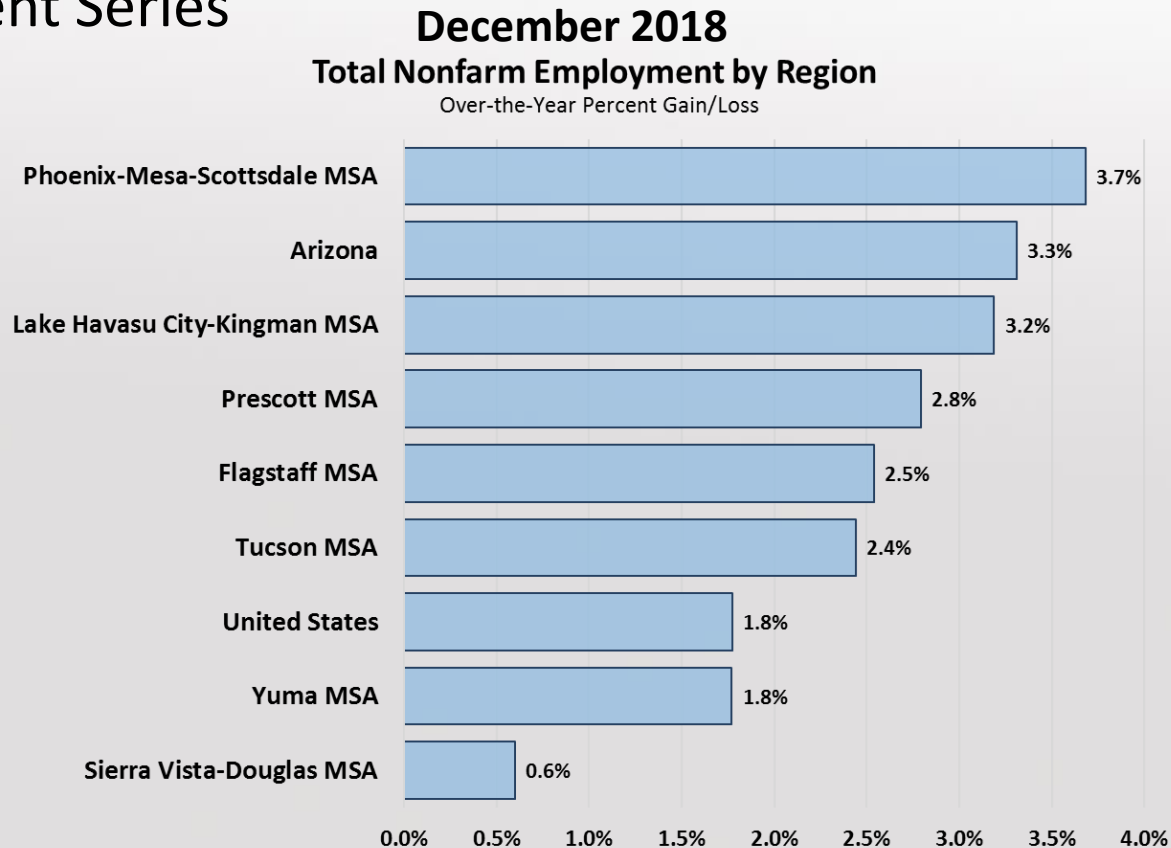
Arizona Over-the-Year Employment Gain/Loss by Sector



Source: Office of Economic Opportunity in collaboration with the US Dept. of Labor's Bureau of Labor Statistics; Current Employment Statistics

- Employment growth has been wide-ranging across most or all industry sectors within Arizona

Monthly Nonfarm Employment Series

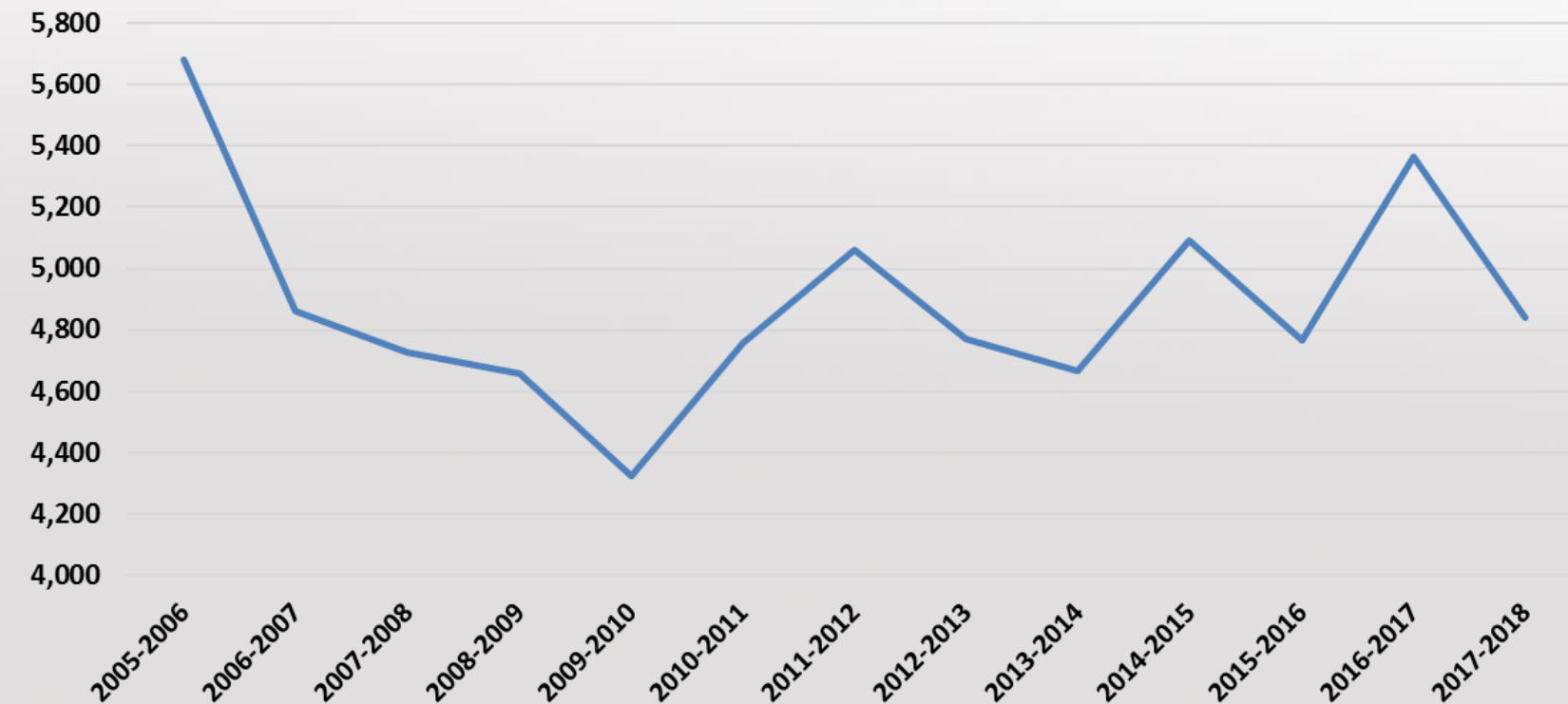


Source: Office of Economic Opportunity in collaboration with the US Dept. of Labor's Bureau of Labor Statistics; Current Employment Statistics

- Employment growth has been spread throughout most or all of Arizona's seven metro areas

U.S. Residents Age 1+ Who Changed Residence to a Different State (Geographic Mobility)

(In thousands)



Source: U.S. Census Bureau

- Geographic mobility across the U.S. has increased since 2009 and which has historically benefitted Arizona

U.S. Census Bureau Population Statistics

Top 10 States in Percentage Growth: 2017 to 2018

Rank	Name	2010	2017	2018	Percent growth
1	Nevada	2,700,679	2,972,405	3,034,392	2.1
2	Idaho	1,567,657	1,718,904	1,754,208	2.1
3	Utah	2,763,891	3,103,118	3,161,105	1.9
4	Arizona	6,392,288	7,048,876	7,171,646	1.7
5	Florida	18,804,580	20,976,812	21,299,325	1.5
6	Washington	6,724,540	7,425,432	7,535,591	1.5
7	Colorado	5,029,316	5,615,902	5,695,564	1.4
8	Texas	25,146,114	28,322,717	28,701,845	1.3
9	South Carolina	4,625,381	5,021,219	5,084,127	1.3
10	North Carolina	9,535,736	10,270,800	10,383,620	1.1

U.S. Census Bureau Population Statistics

Top 10 States in Numeric Growth: 2017 to 2018

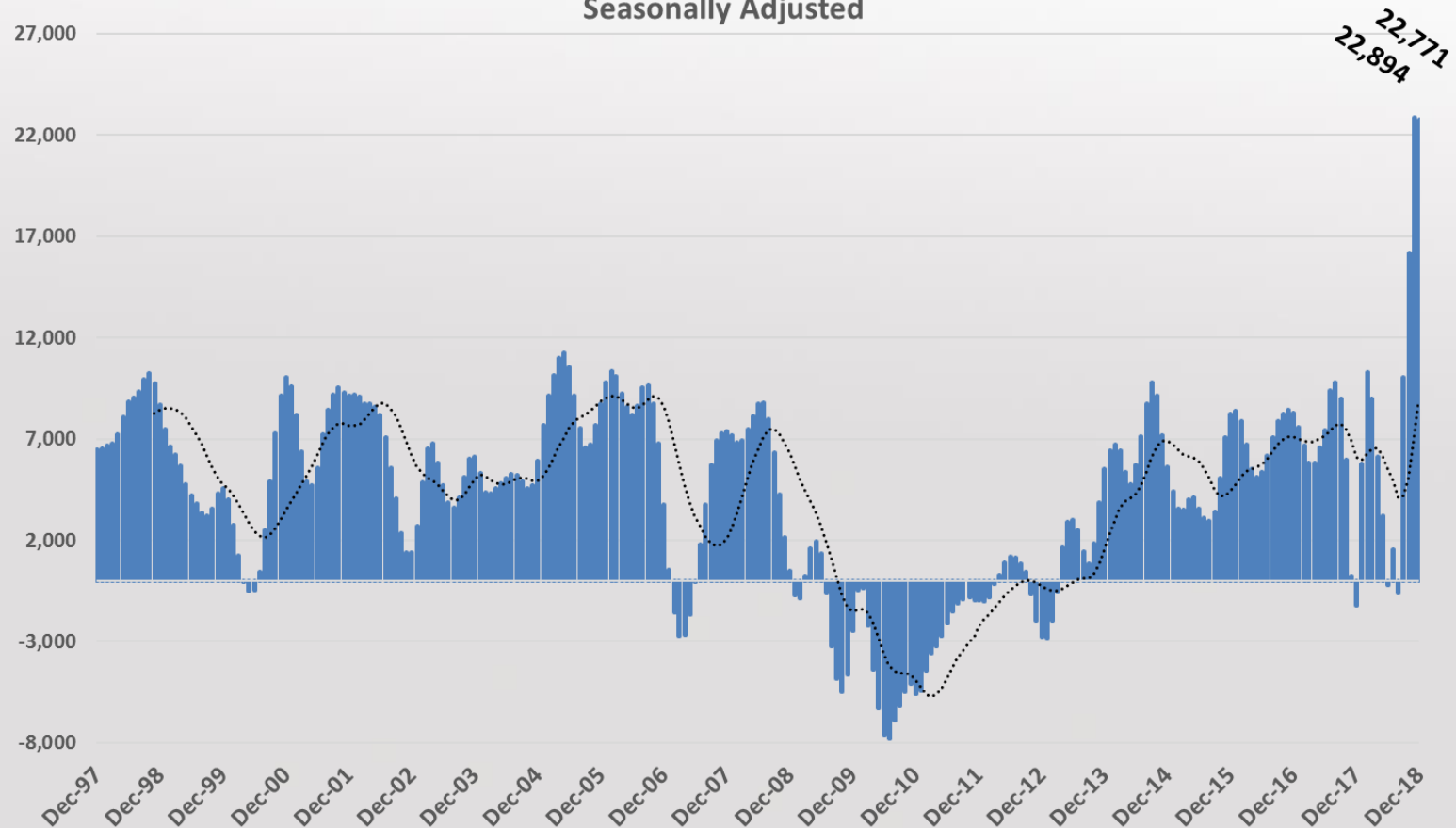
Rank	Name	2010	2017	2018	Numeric growth
1	Texas	25,146,114	28,322,717	28,701,845	379,128
2	Florida	18,804,580	20,976,812	21,299,325	322,513
3	California	37,254,523	39,399,349	39,557,045	157,696
4	Arizona	6,392,288	7,048,876	7,171,646	122,770
5	North Carolina	9,535,736	10,270,800	10,383,620	112,820
6	Washington	6,724,540	7,425,432	7,535,591	110,159
7	Georgia	9,688,709	10,413,055	10,519,475	106,420
8	Colorado	5,029,316	5,615,902	5,695,564	79,662
9	South Carolina	4,625,381	5,021,219	5,084,127	62,908
10	Nevada	2,700,679	2,972,405	3,034,392	61,987

U.S. Census Bureau Population Statistics

Top 10 States in Net Migration Growth: 2017 to 2018

Rank	Name	2010	2017	2018
1	Florida	32,712	325,823	308,272
2	Texas	43,601	185,833	187,545
3	Arizona	6,205	77,178	97,575
4	North Carolina	25,249	85,435	87,026
5	Washington	8,251	95,866	77,106
6	Georgia	7,057	62,013	63,700
7	South Carolina	5,655	55,306	56,265
8	Colorado	9,168	46,090	51,500
9	Nevada	(2,070)	40,945	50,696
10	Tennessee	3,839	50,918	48,946

Arizona Labor Force Numeric Change Seasonally Adjusted



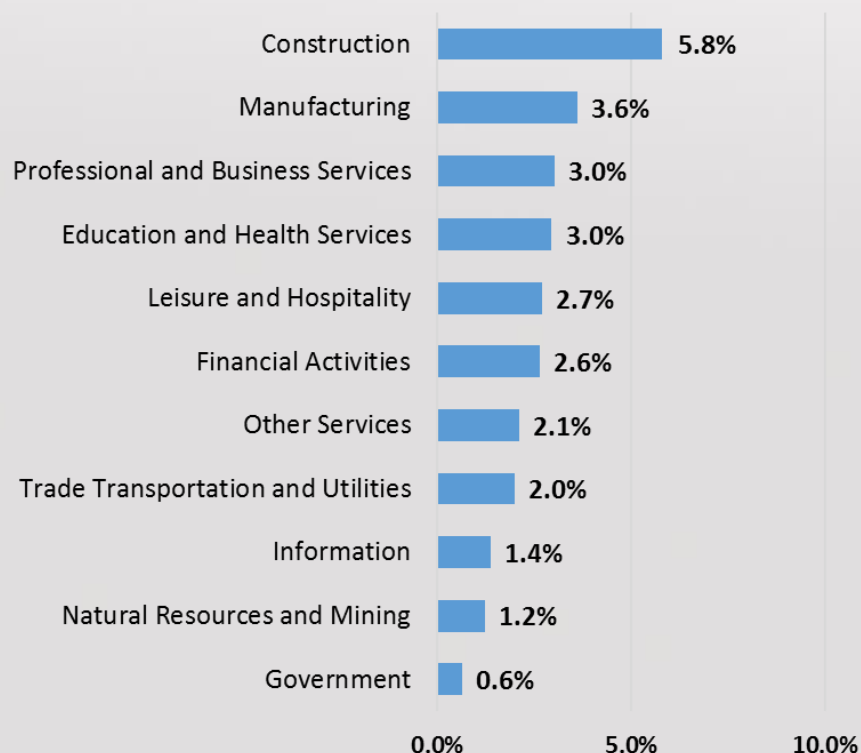
Source: U.S. Dept. of Labor Bureau of Labor Statistics

- Labor force levels increased by 107,104 people from Dec. '17 - Dec' 18

Industry Employment

Arizona Supersector Employment

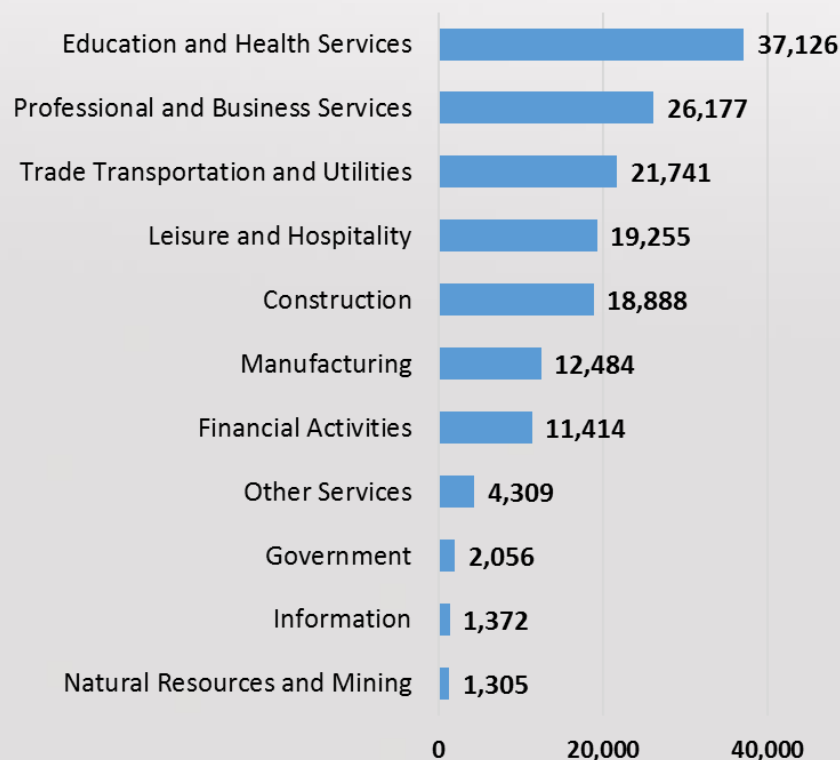
2019-2020 Annualized Percentage Change



Source: Office of Economic Opportunity, 2019 Employment Projections

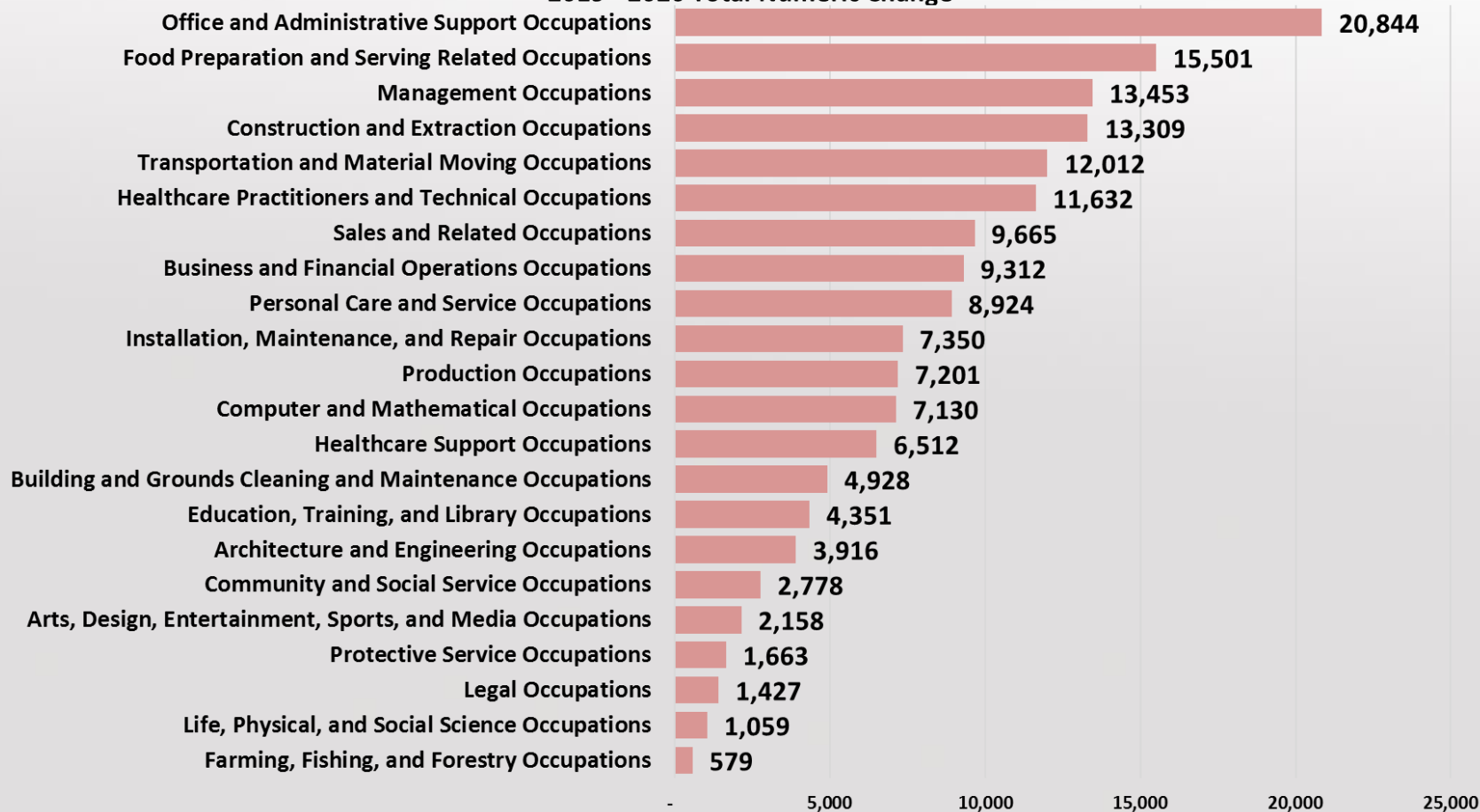
Arizona Supersector Employment

2019-2020 Numeric Change



Arizona Major Occupation Employment

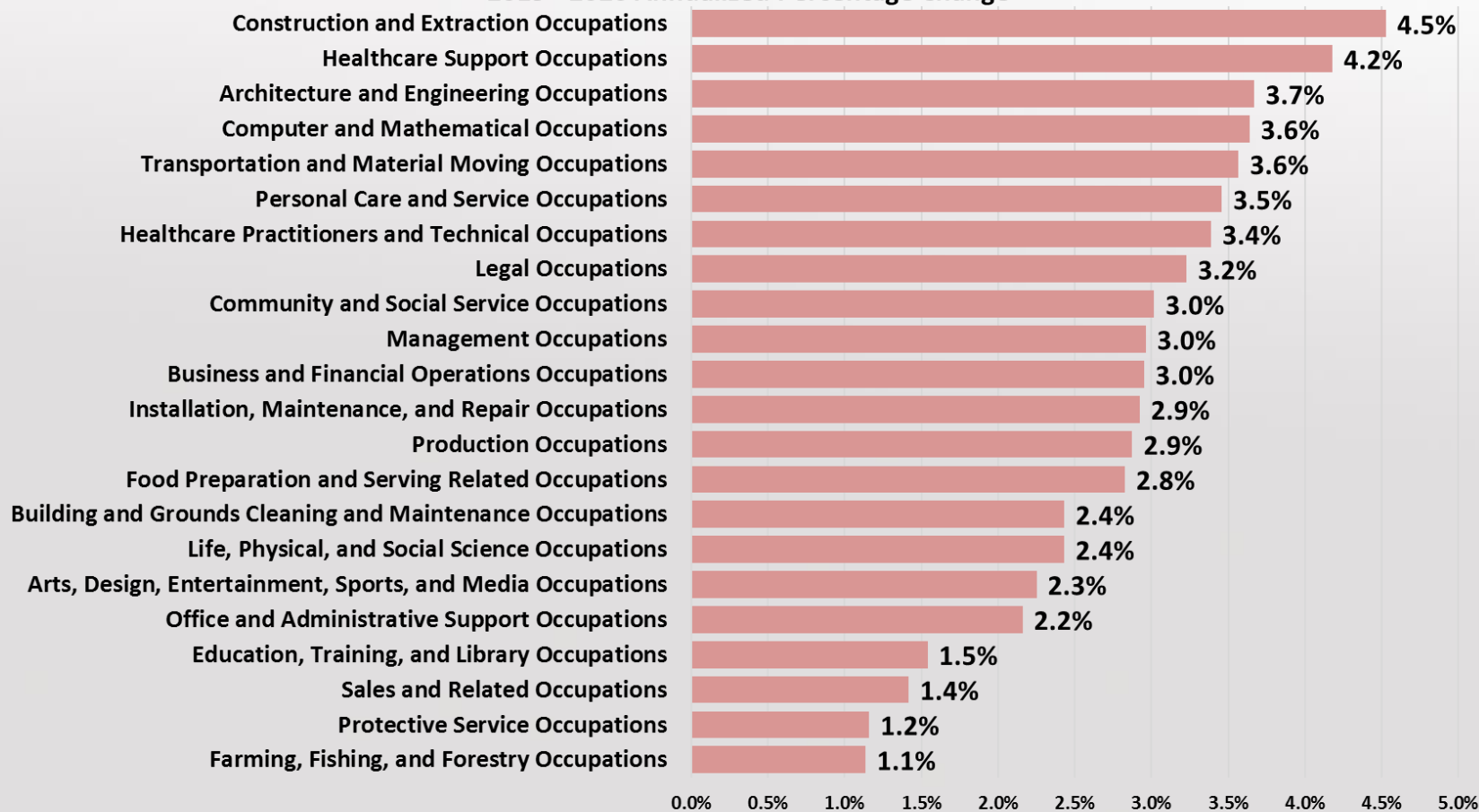
2019 - 2020 Total Numeric Change



Source: Office of Economic Opportunity, 2019 Employment Projections

Arizona Major Occupation Employment

2019 - 2020 Annualized Percentage Change



Source: Office of Economic Opportunity, 2019 Employment Projections

Substate Regions

Sector	<u>Historic Change¹</u> 2017-2018		<u>Projected Change²</u> 2019-2020	
	Numeric Change	% Change (Annual)	Numeric Change	% Change (Annual)
Arizona	150,164	2.6%	165,691	2.7%
Maricopa County	130,020	3.2%	138,457	3.2%
Yavapai County	3,877	2.8%	3,961	2.7%
Mohave and La Paz Counties	2,468	2.0%	3,360	2.7%
Coconino County	1,623	1.2%	2,311	1.6%
Pima County	10,865	1.4%	11,905	1.5%
Pinal County	750	0.6%	1,993	1.5%
Yuma County	1,337	1.0%	1,866	1.4%
Northeastern Arizona	-187	-0.1%	1,286	1.0%
Southeastern Arizona	1,543	1.3%	581	0.5%
Santa Cruz County	-349	-1.1%	101	0.3%

¹Employment change from 2016 Q2-2018 Q2

²Employment change from 2018 Q2-2020 Q2

Source: Office of Economic Opportunity, 2019 Employment Projections

Industry Highlight: Construction

Sector	<u>Historic Change¹</u> 2017-2018		<u>Projected Change²</u> 2019-2020	
	Numeric Change	% Change (Annual)	Numeric Change	% Change (Annual)
Construction	22,370	7.9%	18,888	5.8%
Construction of Buildings	6,075	11.1%	5,931	8.9%
Heavy & Civil Engineering Construction	2,167	5.8%	1,067	2.6%
Specialty Trade Contractors	14,128	7.4%	11,892	5.4%

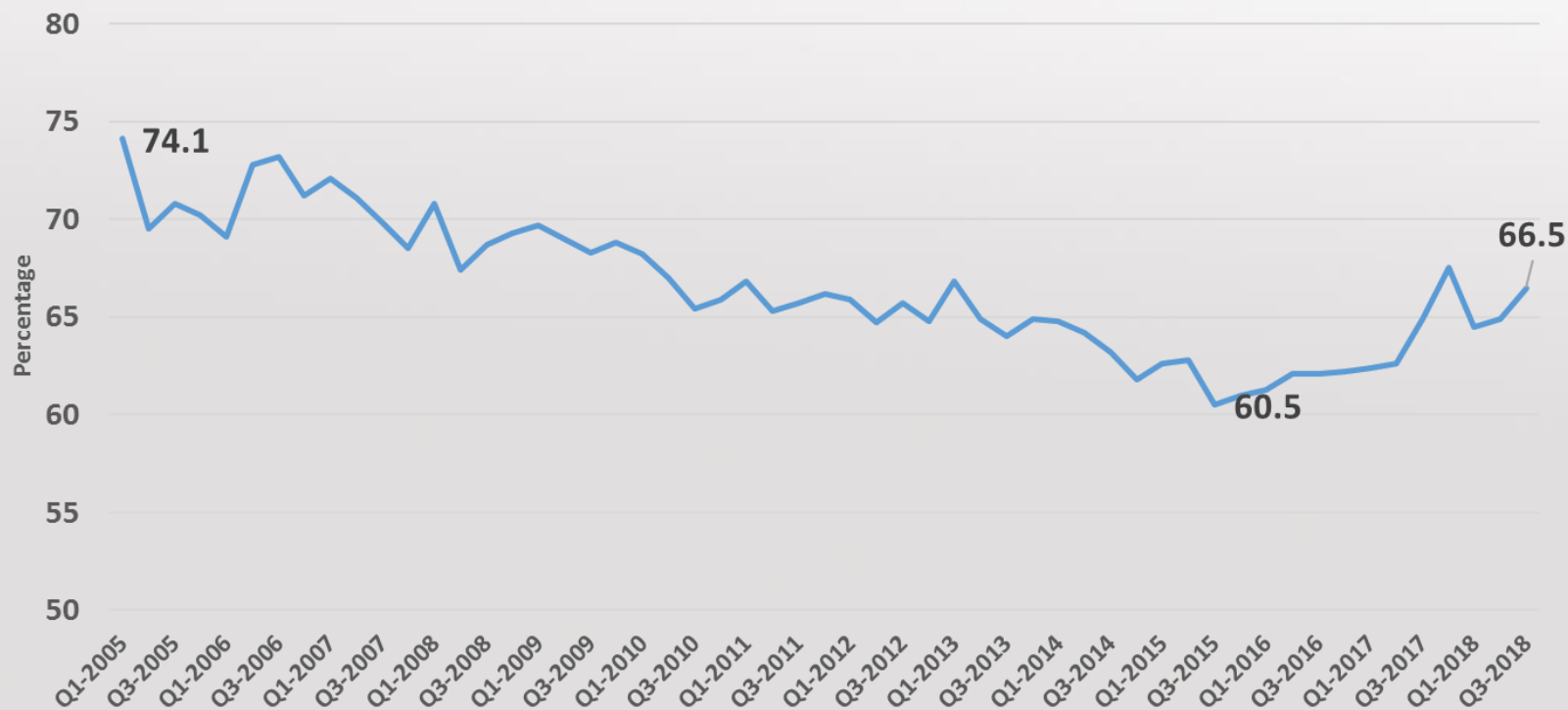
¹Employment change from 2016 Q2-2018 Q2

²Employment change from 2018 Q2-2020 Q2

Source: Office of Economic Opportunity, 2019 Employment Projections

- Construction employment is projected to continue its strong growth into 2020 helped along by pent-up demand leftover from the last recession

Home Ownership Rates Arizona



Source: US Census Bureau

- Homeownership rates are on the rise as economic opportunity improves throughout the state

Rental Vacancy Rates

Arizona



Source: US Census Bureau

**Median Number of Months on Sales Market for Newly Completed Homes
U.S.; Not Seasonally Adjusted**

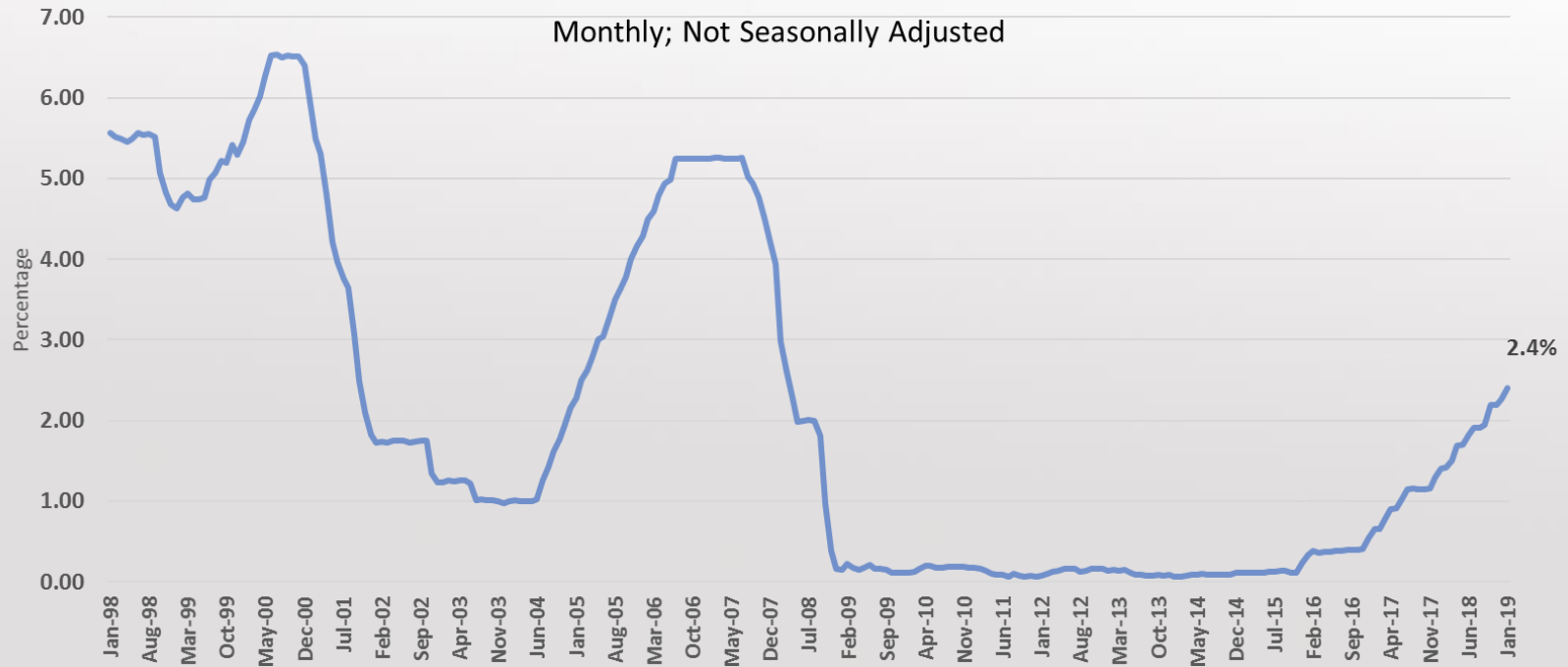


Source: U.S. Bureau of the Census and U.S. Department of Housing and Urban Development

- Fast turn-around on housing transactions allow residents of other states to pursue opportunities across the country, and in particular, in Arizona

Effective Federal Funds Rate

Monthly; Not Seasonally Adjusted



Source: Board of Governors of the Federal Reserve System (US)

- Recent increases in the effective federal funds rate could dissuade potential home buyers from purchasing
- The Federal Reserve decided to pause federal funds rate increases and it is unclear if or when they might resume ¹

1. Clouse, James A. "Minutes of the Federal Open Market Committee, January 29-30, 2019." *The Fed - Money Stock and Debt Measures - H.6 Release - April 26, 2018*, Board of Governors of the Federal Reserve System (U.S.), 2019, www.federalreserve.gov/newsevents/pressreleases/monetary20190220a.htm.

Industry Highlight: Manufacturing

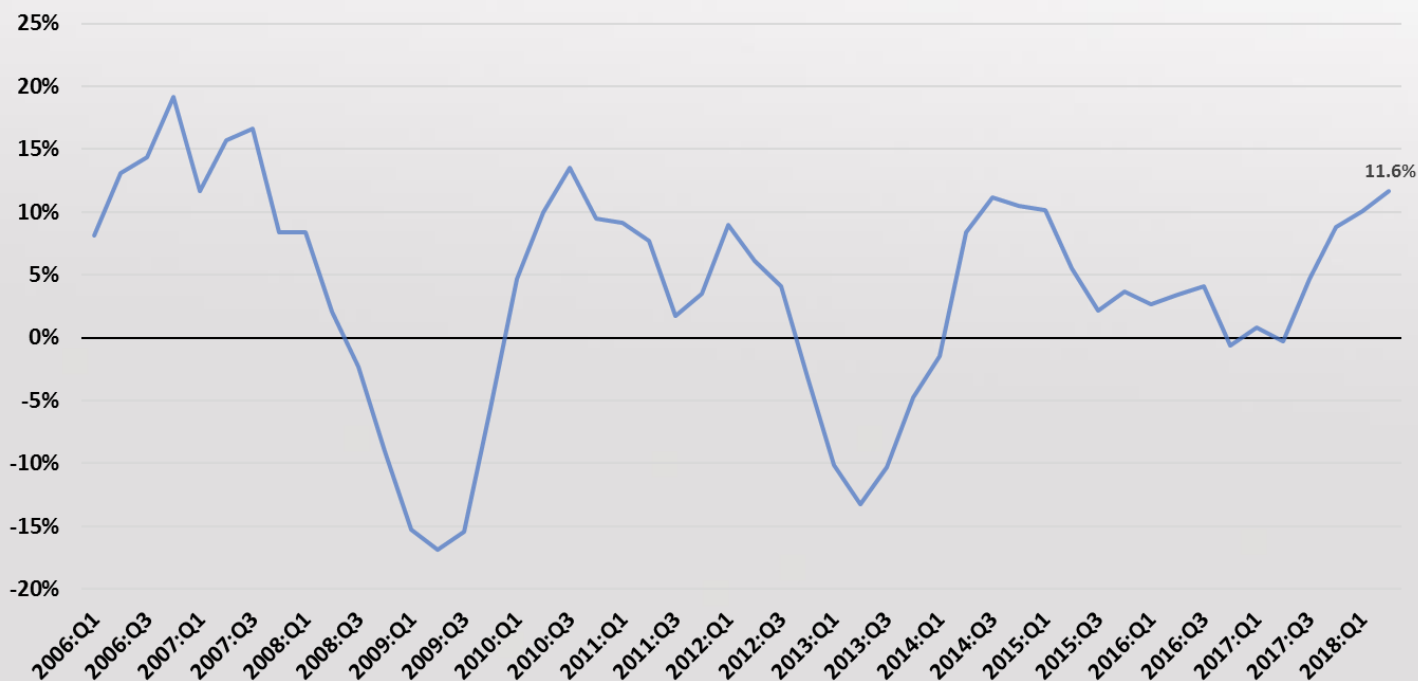
Sector	<u>Historic Change¹</u> 2017-2018		<u>Projected Change²</u> 2019-2020	
	Numeric Change	% Change (Annual)	Numeric Change	% Change (Annual)
Manufacturing	9,182	2.8%	12,484	3.6%
Electrical Equip., Appliance, & Component Mnfg.	551	10.2%	495	7.7%
Machinery Mnfg.	828	6.1%	870	5.7%
Transportation Equipment Mnfg.	2,083	3.5%	2,812	4.4%
Fabricated Metal Product Mnfg.	242	0.6%	1,632	4.0%
Miscellaneous Mnfg.	561	2.5%	760	3.2%
Furniture and Related Product Mnfg.	226	1.9%	279	2.3%
Computer and Electronic Product Mnfg.	-251	-0.4%	1,372	2.1%
Primary Metal Mnfg.	-203	-2.7%	-84	-1.2%

¹Employment change from 2016 Q2-2018 Q2

²Employment change from 2018 Q2-2020 Q2

Source: Office of Economic Opportunity, 2019 Employment Projections

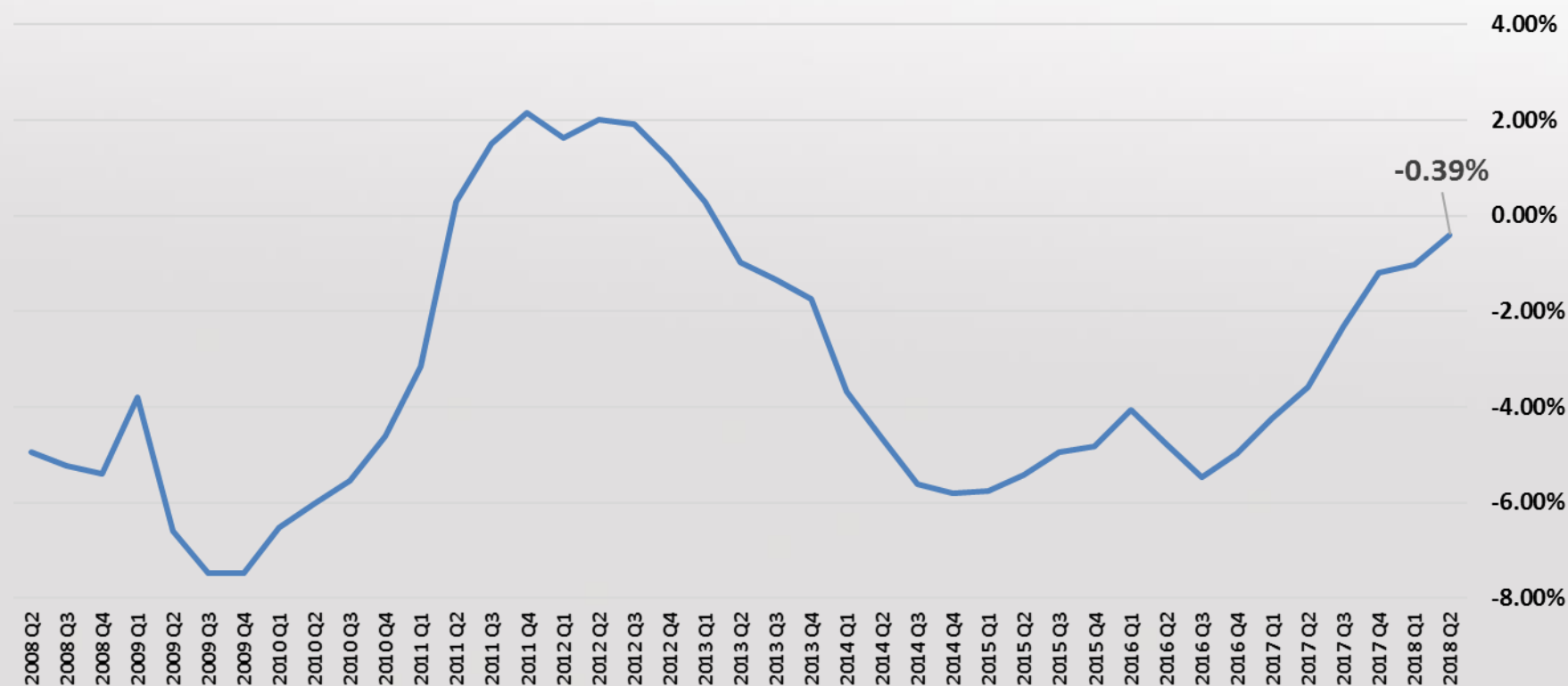
Real Manufacturing GSP in Arizona (millions of chained 2012 dollars) Over-the-Year Percent Change



Source: U.S. Bureau of Economic Analysis

- Manufacturing gross state product has recently recorded strong over-the-year growth, a positive indicator for current and future employment growth

Arizona Computer & Electronic Product Manf. Annualized Percent Change; Not-Seasonally Adjusted



Source: Office of Economic Opportunity

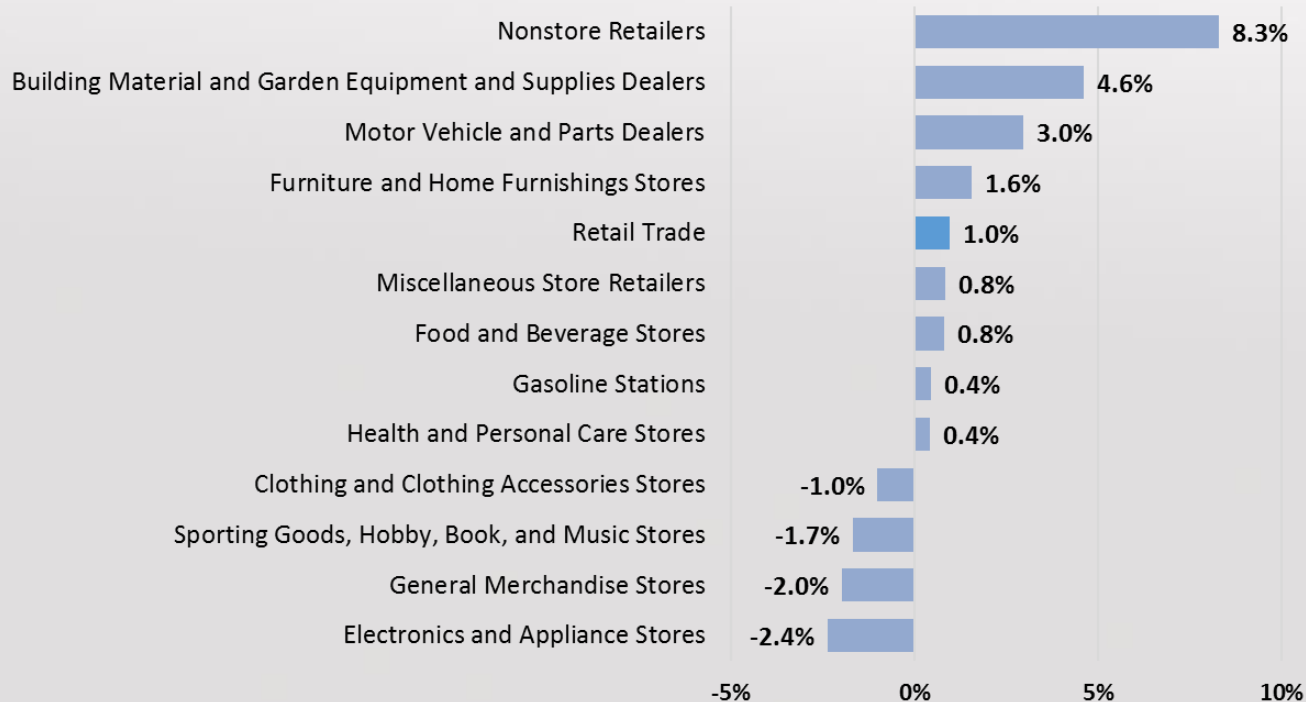
Computer and Electronic Product Manufacturing has been gradually improving since 2017 and is projected to continue into 2020

Industry Highlight:

Retail Trade

Arizona Retail Trade Subsectors

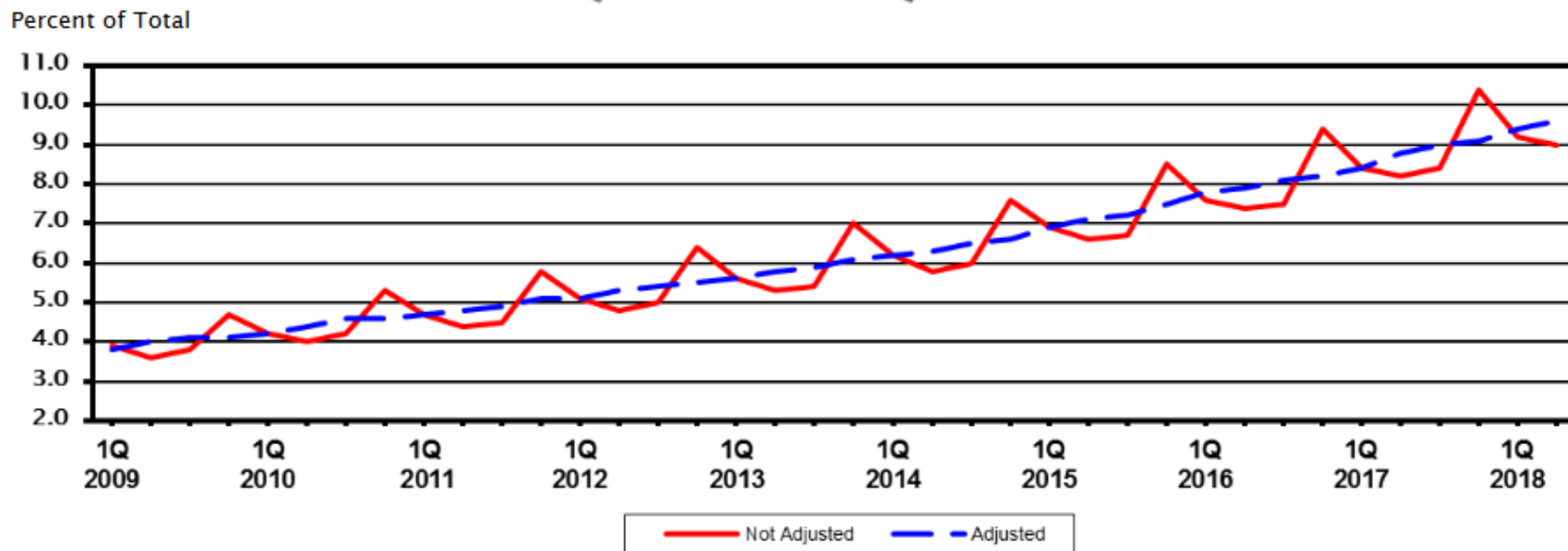
2019-2020 Percentage Change



Source: Office of Economic Opportunity, 2019 Employment Projections

Non-traditional and on-the-go retail are projected to record a majority of the growth within Retail Trade

Estimated Quarterly U.S. Retail E-commerce Sales as a Percent of Total Quarterly Retail Sales:
1st Quarter 2009 – 2nd Quarter 2018



Source: U.S. Census Bureau

Online Retail continues to gain a larger share of total retail sales nationwide

Industry Highlight: Financial Activities

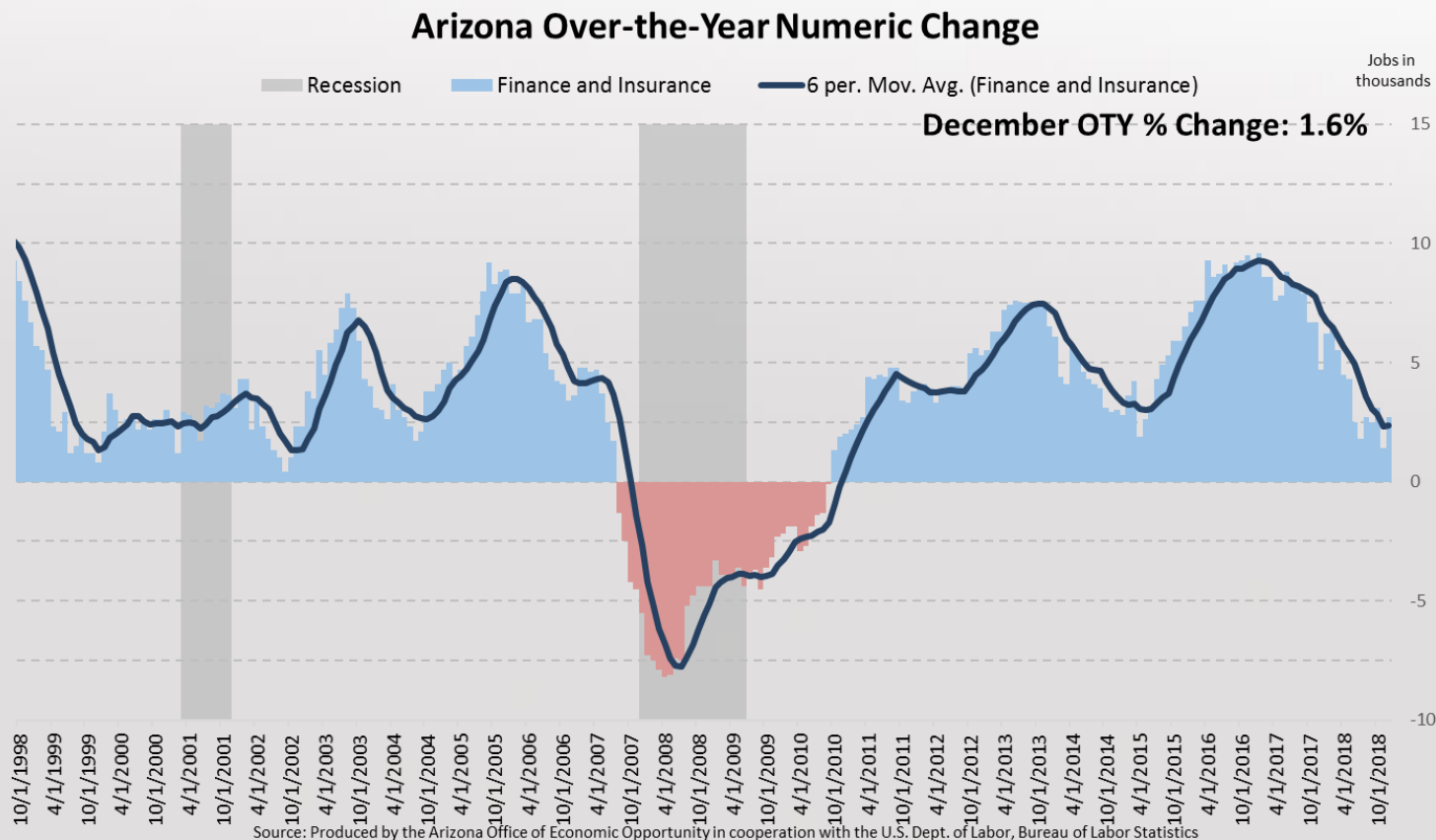
Sector	<u>Historic Change¹</u> 2017-2018		<u>Projected Change²</u> 2019-2020	
	Numeric Change	% Change (Annual)	Numeric Change	% Change (Annual)
Financial Activities	16,252	4.0%	11,414	2.6%
Finance and Insurance	12,280	4.1%	8,011	2.5%
Credit Intermediation and Related Activities	5,090	3.0%	4,246	2.4%
Securities, Commodity Contracts, and Other	2,747	7.2%	1,861	4.3%
Insurance Carriers and Related Activities	4,248	4.5%	1,887	1.9%
Real Estate and Rental and Leasing	3,972	3.9%	3,403	3.1%
Real Estate	3,825	5.5%	2,683	3.5%
Rental and Leasing Services	162	0.5%	737	2.4%

¹Employment change from 2016 Q2-2018 Q2

²Employment change from 2018 Q2-2020 Q2

Source: Office of Economic Opportunity, 2019 Employment Projections

Monthly Nonfarm Employment Series



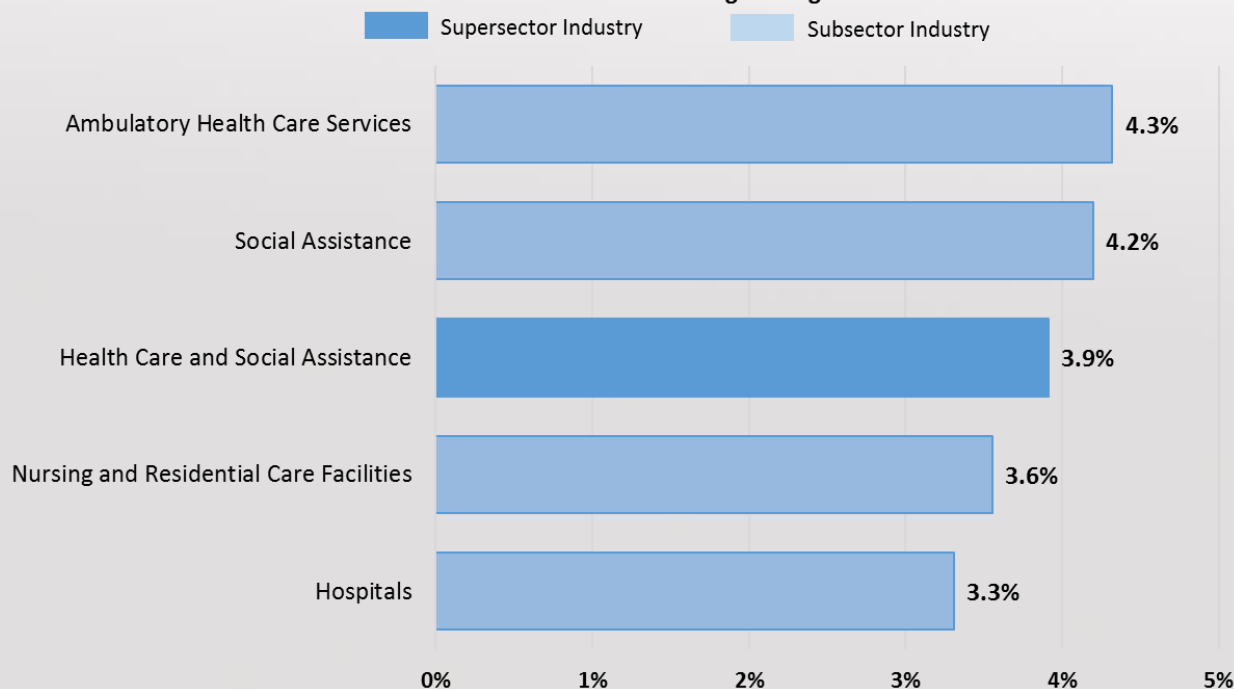
Finance and Insurance has recorded slowing growth through 2017 and is projected to grow at a slower pace than was recorded through 2016-2018

Industry Highlight:

Health Care

Arizona Health Care and Social Assistance Subsectors

2019-2020 Percentage Change

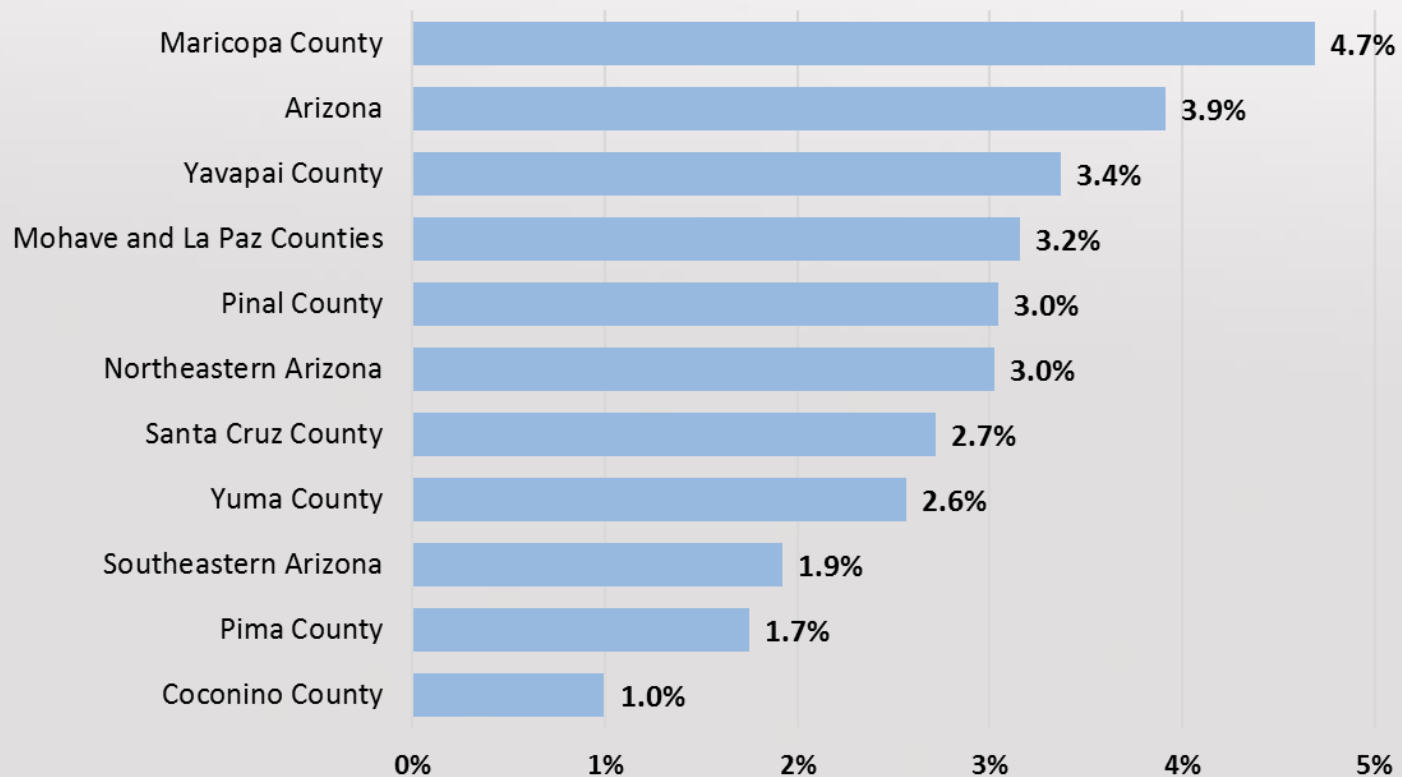


Source: Office of Economic Opportunity, 2019 Employment Projections

- Health Care demand will be driven, in part, by increasing state population levels and aging state demographic profile

Health Care and Social Assistance Sector by Region

2019-2020 Percentage Change



Source: Office of Economic Opportunity, 2019 Employment Projections

Report Summary

- Total employment is projected to grow by 165,691 jobs over the two-year period, reaching 3,180,933 jobs in 2020 Q2
- All 11 industry sectors and all 22 major occupation groups are projected to add jobs
- Employment growth is projected to occur within all 10 substate areas with Maricopa County recording the largest percentage gain (3.2% growth)
- Strong employment growth within Construction is projected to continue due, in part, to increases in population and pent-up demand from the recession
- The Arizona economy has the capacity to grow given the sustained increase in labor force levels experienced throughout 2018

Thank You!

Any Questions?

Upcoming Release Schedule:

- January Employment Report on March 7th
- February Employment Report on March 21st